

Remarks

Favorable reconsideration of this application, in view of the above amendments and in light of the following remarks and discussion, is respectfully requested.

Claims 1-11 are currently pending in the application; Claims 1, 2, 5-7, 9 and 10 having been amended, and new Claim 11 having been added, by way of the present response. Applicants respectfully assert that support for the changes to the claims is self-evident from the originally filed disclosure, including the original claims, and that therefore no new matter has been added.

In the Office Action Claim 10 was objected to under 37 C.F.R. § 1.75(c) as being in improper form; it was asserted that the incorporation of essential material in the specification by reference to a foreign application, patent, or publication is improper; and Claims 1-9 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,196,911 to Preston et al. (Preston) in view of U.S. Patent No. 5,547,417 to Breivogel et al. (Breivogel).

As stated above Claim 10 was objected to under 37 C.F.R. § 1.75(c) as being in improper form because a multiple dependent claim cannot depend from another multiple dependent claim. In response, Applicants have amended the dependency of Claim 10 so as to be in proper form. Applicants have also amended the dependency of Claim 9 for similar reasons. Thus, Applicants respectfully request that the objection to Claim 10 be withdrawn.

As stated above it was asserted that the incorporation of essential material in the specification by reference to a foreign application, patent, or publication is improper. In response, Applicants respectfully request the Examiner's clarification as to what essential subject matter is asserted to have been incorporated, as well as to the identity of the foreign application, patent, or publication asserted to be referenced.

As stated above Claims 1-9 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Preston in view of Breivogel. Applicants respectfully request that the rejection of the claims be withdrawn for the following reasons.

The present invention is directed to abrasive cloth dressers. Independent Claim 1 recites a rotatable base metal having a dressing face on a surface of the base. A plurality of abrasive grain units each includes a large number of abrasive grains. The abrasive grain units are arranged on the dressing face in a circumference direction of the dressing face. Adjusters are provided in the base metal, corresponding to each or some of the abrasive grain units. The adjusters serve to adjust a difference in height with respect to the dressing face between reference planes of the respective abrasive grain units. The reference planes are each defined by ends of the abrasive grains in the corresponding abrasive grain unit.

Regarding the rejection of independent Claim 1, Preston is directed to a tool with abrasive segments. Applicants respectfully assert that Preston does not teach or suggest, however, and the Office Action explicitly concedes that Preston does not teach or suggest, the claimed features of adjusters serving to adjust a difference in height of abrasive grain units arranged on a dressing face of a rotatable base, as recited in the independent claim.¹

Specifically, independent Claim 1 recites “adjusters provided in the base metal, corresponding to each or some of the abrasive grain units, the adjusters serving to adjust a difference in height with respect to the dressing face between reference planes of the respective abrasive grain units, the reference planes each being defined by ends of the abrasive grains in the corresponding abrasive grain unit.”

The Office Action relies on Breivogel in an attempt to remedy the deficiencies of Preston. Applicants respectfully assert that Breivogel does not remedy these deficiencies, however, for the following reasons.

¹ Page 3, lines 2-5, of the Office Action.

Breivogel is directed to a method and apparatus for conditioning a semiconductor polishing pad. As shown in Figure 1, for example, of Breivogel, a conditioning block 222 contains four stainless steel diamond-tipped 234 threaded shanks 236 which provide discrete points for generating grooves into a polishing pad 204. The threaded shanks 236 have Hex driver sockets 238 on a top surface so that a distance at which the diamond tips 234 extend from the conditioning block 222 can be easily varied. The grooves generated into the polishing pad 204 help to facilitate a polishing process by continually providing a plurality of point contacts between the polishing pad 204 and a substrate 202 to be polished by the polishing pad 204, as well as helping to channel a slurry to a polishing pad/substrate interface.²

The Office Action asserts that it would have been obvious to modify the tool of Preston to include the threaded shanks 236 of Breivogel. Applicants respectfully assert that even if Applicants agreed with this assertion, which Applicants do not, the combination still does not teach or suggest the claimed features recited in independent Claim 1.

Specifically, Applicants respectfully assert that the threaded shanks 236 of Breivogel do not serve to adjust differences in height of abrasive grain units arranged on a dressing face of a rotatable base, as recited in independent Claim 1. Rather, as discussed above, Applicants respectfully assert that Breivogel states that the distance which the tips of the threaded shanks 236 extend from the conditioning block 222 is adjusted to vary a depth of the groove formed in the polishing pad 204 by the tips of the threaded shanks 236.

Applicants respectfully assert that the claimed features can provide numerous advantages. By way of specific non-limiting examples, Applicants respectfully assert that the features recited in independent Claim 1 can provide an abrasive cloth dresser capable of adjusting by the adjusters its dressing face to give the abrasive cloth a uniform surface, even

² Column 5, lines 35-60, and from Column 4, line 62 to Column 5, line 13.

if the dressing face state exhibits individual differences (e.g., regardless of end shapes of abrasive grains, or variations in size of abrasive grains or abrasive grain intervals).

Applicants respectfully assert that these advantages cannot be provided by Breivogel, which does not adjust differences in height of abrasive grain units, but rather which is directed to reducing a processing time to polish the substrate 202 with the polishing pad 204 including grooves formed by the threaded shanks 236.

Further, according to the present invention, even in the case of a plurality of processes, processing conditions and devices to which different types of dressers are to be applied, a single dresser can be used by adjusting and optimizing differences of height of abrasive grain units. It facilitates manufacturing of dresser and users do not have to stock many different dressers.

Thus, for the above reasons, Applicants respectfully assert that neither Preston nor Breivogel, whether taken alone or in combination, teaches or suggests the claimed features recited in independent Claim 1. Therefore, Applicants respectfully request that the rejection of independent Claim 1 under 35 U.S.C. § 103(a) be withdrawn, and respectfully request the allowance of independent Claim 1.

Applicants respectfully assert that Claims 2-10 are allowable for the same reasons as independent Claim 1 from which they depend, as well as for their own features. Thus, Applicants respectfully request that dependent Claim 10 be treated on the merits, and respectfully request the allowance of each of dependent Claims 2-10.

Applicants respectfully assert that new independent Claim 11 is allowable for reasons similar to those of independent Claim 1. Thus, Applicants respectfully request the allowance of independent Claim 11.

Consequently, in view of the present amendment, no further issues are believed to be outstanding in the present application, and the present application is believed to be in

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condition for formal Allowance. A Notice of Allowance for Claims 1-11 is earnestly solicited.

Should the Examiner deem that any further action is necessary to place this application in even better form for allowance, the Examiner is encouraged to contact the undersigned representative at the below listed telephone number.

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(OSMMN 06/04)

Respectfully submitted,

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